

REMARKS

Status of the Claims

In the present Office Action, the Examiner asserted that no copy of the priority application was of record.

In the present Office Action, Figures 1-8 were objected to as not including the legend "Prior Art." Figures 1-15 were objected to as lacking reference characters. Reference character 1 was objected to as showing a flange, not a gutter. The Examiner further objected to the drawings, arguing that the drawings should when possible show the improved portion itself, when the invention comprises an invention over the prior art, and in particular, that the drawings do not show how a tire could be mounted on the rim of the present invention, asserting that the figures showed only a single bead seat and rim flange.

In the present Office Action, the Abstract of the invention was objected to.

In the present Office Action, the specification of the application was objected to as having the claims to priority in Paragraph 0009, not Paragraph 0001.

In the present Office Action, claims 3-5, 7, 29, 31, 36, and 40 were objected to as having several informalities.

In the present Office Action, claims 2, 16, 29-44, and 47 were rejected under 35 U.S.C. § 112 as being indefinite or unclear.

In the present Office Action, claims 1-4, 6-9, 11-19, 21-23, 25-28, 30-39, 45-48, and 50-51 were rejected under 35 U.S.C. § 102(b) as being anticipated by Jurus '810.

In the present Office Action, claims 1-51 were rejected under 35 U.S.C. § 102(e) as being anticipated by Srivathsan.

In the present Office Action, claims 5, 20, 29, 40-44, and 49 were rejected under 35 U.S.C. § 103(a) as being obvious over Jurus in view of Ashley et. al.

In the present Office Action, claims 10 and 24 were rejected under 35 U.S.C. § 103(a) as being obvious over Jurus in view of Beyer.

In the present Office Action, claims 1-51 were provisionally rejected on the ground of obviousness-type double patenting as being unpatentable over claims 1-51 of copending application 10/585,468.

In the present Office Action Response, Independent claims 41-44 are herein cancelled, and dependant claims 4, 5, 12, 13, 19, 20, 26-28, 38, 39, 48, and 49 are also cancelled.

Argument

1.0 The Present Application

Claims 1-51 are presently pending in the present application, titled Wheels of Single Component Construction and Method of Making, which is directed towards a method of manufacturing a unitary steel wheel having a 5° taper bead seat, equipment required therefore, and the resultant improved wheel. The application as pending comprises nine (9) independent claims, and 42 claims depending from those independent claims. Four (4) independent claims and thirteen (13) dependant claims are cancelled herein.

At the present, almost all commercially produced wheels are manufactured from several components, which are later joined to form a complete wheel assembly, which includes a center disk portion for mounting to the hub of a vehicle, and an outer rim portion, onto which a tire may be mounted. Wheels which form the center disk and the rim separately have issues regarding concentration of stresses resultant from the joining method, while wheels which use a multi-part rim section have not only stress concentration problems, but also sealing problems between the halves of the rings.

Prior art unitary wheels are limited, in that the shapes which could be formed were not practical with existing vehicle requirements, were formed out of materials such as aluminum, which do not share the strength and cost advantages of steel, or relied on processes which introduced adverse characteristics to partially formed wheels, such that later processing steps were impeded. Accordingly, the few attempts at the fabrication of unitary steel wheels have not been commercially successful.

The present invention utilizes a round steel blank which is spin formed to form a cylindrical section, which comprises the center disk and complete rim. The steel blank is provided with a center hole, the center of which forms the axis of rotation of the blank for the manufacturing operations. The blank is first spin formed to form a cylindrical preform, which is then further processed in a spin forming machine to form inner and outer bead seats and flanges on the cylindrical outer portion of the perform. One bead seat of the present invention utilizes a 5° taper. Finally, additional features as required, such as mounting bolt holes and vent holes to allow air circulation, may be formed on the unitary wheel.

Jurus, U.S. Pat. No. 4,554,810, is directed towards a segment of a complete wheel. The segment includes part of the outer rim, as well as the center disk. Jurus does require, however, that the second segment to complete the outer rim, be formed separately, and thus does not disclose a unitary wheel, or a method for forming one. In particular, the structure of Jurus does not include both bead seats on a unitary piece.

Evans U.S. Pat. No. 4,185,370 likewise does not disclose a unitary wheel, but rather only a method for forming the outer rim portion, leaving the center disk as a separate assembly.

Ashley Jr., et. al., U.S. Pat. No. 4,962,587 also does not disclose a unitary wheel, but rather a rim portion which would then have to be joined to a center disk.

Beyer U.S. Pat. No. 4,528,734 is thus the most relevant reference, as it does describe a unitary wheel, although the fabrication method is limited to the use of soft alloys, as a result of the reliance on forging to form the perform. The use of forging operations work hardens the material, as well as creates a second, significant limitation to the process of forming the wheel: as the preform is formed by forging, the center axis of the pre-form is not of necessity the same as the axis of the spin forming operation. Thus, not only can the resultant wheel have concentricity issues, spinning operations performed as a later part of the process may see large tool load variations resultant from the lack on concentricity. Thus, the formation of the pre-form through a forging process creates significant limitations, as opposed to the wheel of the present invention.

3.0 Copy of Priority Application

In the present Office Action, the Examiner noted that no copy of the priority application was of record.

The present Application is a U.S. National Application filed under 35 U.S.C. § 371, and accordingly Applicant believes that certified copies of the underlying Indian Applications are not required. Notwithstanding, Applicant submits herewith copies of the certified priority documents as Exhibit A.

4.0 Correction of Drawings

In the present Office Action, Figures 1-8 were objected to as not including the legend "Prior Art", and as lacking reference characters. Figures 1-15 were objected to as lacking reference characters.

Figures 1-8 all represent the prior art rim. Accordingly, the legend "Prior Art" has been added to Figures 1-8.

Applicant has further amended the specification and Figures to add additional reference characters. With respect to the failure of other Figures to illustrate a tire mounted on the rim of the present invention, or the rim of the present invention mounted on a vehicle, these claims have been cancelled, and accordingly the rejections are believed no longer relevant.

5.0 Correction of the Abstract

In the present Office Action, the Abstract of the invention was objected to. Applicant has revised the Abstract, and a substitute Abstract is submitted herewith.

6.0 Correction of the Priority Claim

In the present Office Action, the specification of the application was objected to as having the claims to priority in Paragraph 0009, not Paragraph 0001.

Paragraph 0009 has been moved to precede Paragraph 0001, and amended to properly reflect the present applications priority claim from PCT Application PCT/IN2005/000006, titled "Wheels of Unitary Construction and Method of Making Same," and accordingly the objection is believed overcome.

7.0 Correction of Informalities

In the present Office Action, claims 3-5, 7, 29, 31, 36, and 40 were objected to as having several informalities.

Claims 4 and 5 are herein cancelled, and the objections are thus believed moot.

With respect to claims 3 and 7, the errant comma has been removed.

With respect to claim 29, the errant periods have been removed, as well as the requested comma added. The spelling of preform has been corrected (with apologies for the tendency of auto spelling correction to randomly correct preform to perform.) The requested replacements of the terms “of” and “of a” have been entered.

With respect to claim 31, spelling of preform has been corrected.

With respect to claim 36, a missing period has been added.

With respect to Claim 40, the preamble of the claim has been corrected to read “An apparatus,” and a comma has been inserted after “flange”, and after “blank”.

8.0 Rejections under 35 U.S.C. § 112

In the present Office Action, claims 2, 16, 29-44, and 47 were rejected under 35 U.S.C. § 112 as being indefinite or unclear.

Claims 38, 39, and 41-44 have been herein cancelled, and accordingly the rejection is believed moot with respect to these claims.

Claims 2, 16, 29, 40-44, and 47 were rejected on the assertion that the term was being redefined to mean flange. Applicant disagrees with the assertion that Applicant has redefined “gutter” to have a meaning other than the meaning commonly understood in the art, i.e., a channel at the base of a bead seat to prevent a tire from displacing from the bead seat. The Examiner has asserted that the Figures identify the gutter as being the flange. While the gutter is generally partially formed by, and thus adjacent to, the flange, the flange is not specifically the gutter. Accordingly, the rejection is traversed.

Claim 29 was asserted to be indefinite, as including limitations addressing the forward direction and the backward direction. These are terms from a particular embodiment of the manufacturing process, are not believed to be necessary to the present invention, and accordingly

have been deleted. With respect to the phrase “formed in subsequent operations,” this language has been deleted as it merely foreshadowed later steps to the method.

Claims 30 and 32 were rejected due to the use of the phrase “the same” to refer to the previously introduced blank. These claims have been amended to use the phrase “the blank”, and accordingly the rejection is believed overcome.

Claims 35-36 and 40 were rejected due to the inclusion of the phrase “conventional press.” The type of the press is irrelevant to the present invention, and the word “conventional” has been deleted.

As claims 41 and 42 have been herein cancelled, the rejections with respect to these claims are believed moot.

9.0 Rejections under 35 U.S.C. § 102(a)

9.1 **Claims 1-4, 6-9, 11-19, 21-23, 25-28, 30-39, 45-48, and 50-51 are not anticipated under 35 U.S.C. § 102(e) by Jurus ‘810**

In the present Office Action, claims 1-4, 6-9, 11-19, 21-23, 25-28, 30-39, 45-48, and 50-51 were rejected under 35 U.S.C. § 102(b) as being anticipated by Jurus. Claims 1, 14, 29, 40, and 45 are the remaining independent claims in the present application, and the rejections are herein addressed with respect to the independent claims, such that the failure of Jurus to disclose key limitations in each of those claims prevents Jurus from anticipating the present invention as claimed.

With respect to claim 1, claim 1 as herein amended makes clear the distinctions between Jurus and the present invention, i.e., that Jurus does not disclose a unitary wheel (See, e.g., figure 2 of Jurus), in that Jurus forms a first portion which encompasses the center disk, and part of the outer rim, with a second part of the outer rim being formed as a separate component. Jurus thus at a minimum does not include a unitary wheel having two bead seats on the outer rim portion, and thus Jurus does not anticipate claim 1 of the present invention.

With respect to claim 14, claim 14 as herein amended makes clear the distinctions between Jurus and the present invention, i.e., that Jurus does not disclose a unitary wheel, in that Jurus forms a first portion which encompasses the center disk, and part of the outer rim, with a

second part of the outer rim being formed as a separate component. Jurus thus at a minimum does not disclose a method involving forming two bead seats on the outer rim portion, and thus Jurus does not anticipate claim 14 of the present invention.

With respect to claim 29, claim 29 as herein amended makes clear the distinctions between Jurus and the present invention, i.e., that Jurus does not disclose a unitary wheel, in that Jurus forms a first portion which encompasses the center disk, and part of the outer rim, with a second part of the outer rim being formed as a separate component. Jurus thus at a minimum does not disclose a method involving forming two bead seats on the outer rim portion, and thus Jurus does not anticipate claim 29 of the present invention.

With respect to claim 40, claim 40 as herein amended makes clear the distinctions between Jurus and the present invention, i.e., that Jurus does not disclose a unitary wheel, in that Jurus forms a first portion which encompasses the center disk, and part of the outer rim, with a second part of the outer rim being formed as a separate component. The apparatus of Jurus shares these deficiencies. Jurus thus at a minimum does not disclose either a unitary wheel having two bead seats on the outer rim portion, or an apparatus for forming such a wheel, and thus Jurus does not anticipate claim 40 of the present invention

With respect to claim 45, claim 45 as herein amended makes clear the distinctions between Jurus and the present invention, i.e., that Jurus does not disclose a unitary wheel, in that Jurus forms a first portion which encompasses the center disk, and part of the outer rim, with a second part of the outer rim being formed as a separate component. The apparatus of Jurus shares these deficiencies. Jurus thus at a minimum does not disclose either a unitary wheel having two bead seats on the outer rim portion, or an apparatus for forming such a wheel, and thus Jurus does not anticipate claim 45 of the present invention

9.2 Claims 1-51 are not Anticipated under 35 U.S.C. § 102(e) by Srivathsan

In the present Office Action, claims 1-51 were rejected under 35 U.S.C. § 102(e) as being anticipated by Srivathsan. 35 U.S.C. § 120(e)(1) provides:

(e)(1) An application for patent filed under section 111(a) or section 363 of this title for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in a provisional

application filed under section 111(b) of this title, by an inventor or inventors named in the provisional application, shall have the same effect, as to such invention, as though filed on the date of the provisional application filed under section 111(b) of this title, if the application for patent filed under section 111(a) or section 363 of this title is filed not later than 12 months after the date on which the provisional application was filed and if it contains or is amended to contain a specific reference to the provisional application.

The present application was filed pursuant to 35 U.S.C. § 371, with an appropriate priority claim under 35 U.S.C. § 363. Although the specification as filed failed to make note of the claim to priority from the PCT case has been corrected herein.

Further, the case asserted as being referenced as a 102(e) reference was filed on the same date as the present case, both with respect to the PCT filings underlying both cases, as well as the US applications underlying both applications.

Finally, the asserted reference is not the filing of another, as both applications have the same inventors, and are filed in the name of the same entity.

Accordingly, the asserted reference is not valid prior art, and the rejection is believed traversed.

10.0 Rejections under 35 U.S.C. § 103(a)

In the present Office Action, claims 5, 20, 29, 40-44, and 49 were rejected under 35 U.S.C. § 103(a) as being obvious over Jurus in view of Ashley et. al.

In the present Office Action, claims 10 and 24 were rejected under 35 U.S.C. § 103(a) as being obvious over Jurus in view of Beyer.

Claims 5, 20, 41-44, and 49 have been cancelled herein, and accordingly, only claims 10, 24, 29 and 40 remain subject to the asserted obviousness rejections.

10.1 Claim 29 is Not Obvious Over Jurus in view of Ashley

As noted above, neither Jurus nor Ashley discloses a unitary wheel, and thus the combination of Jurus and Ashley cannot render the present claim 29 obvious, as there is not only no teaching, but likewise no suggestion or motivation to combine the references to arrive at the

present invention. Jurus and Ashley both explicitly require a multi-part rim, with the attendant disadvantages associated therewith.

10.2 Claim 40 is Not Obvious Over Jurus in view of Ashley

As noted above, neither Jurus nor Ashley discloses a unitary wheel, and thus the combination of Jurus and Ashley cannot render the present claim 40 obvious, as there is not only no teaching, but likewise no suggestion or motivation to combine the references to arrive at the present invention. Jurus and Ashley both explicitly require a multi-part rim, with the attendant disadvantages associated therewith.

10.3 Claims 1 and 10 are not Obvious over the Cited References

As noted above, Jurus does not disclose a unitary wheel. Beyer does not disclose spin forming a center disk, but rather relies on forging, and is further limited to the use of soft alloys, thus teaching away from combining the spin formed steel center disk of the present invention. Furthermore, neither reference teaches the formation of a 5° bead seat in conjunction with a unitary wheel. Thus, the combination of Jurus and Beyer cannot render the present claim 1 obvious, as there is not only no teaching, but likewise no suggestion or motivation to combine the references to arrive at a unitary wheel having a 5° bead seat of the present invention. As claim 10 depends from claim 1, the limitations which are not taught or suggested by Jurus in view of Beyer are present in claim 10, and accordingly claim 10 cannot be obvious over the asserted combination either.

10.4 Claims 14 and 24 are not Obvious over the Cited References

As noted above, Jurus does not disclose a unitary wheel. Beyer does not disclose spin forming a center disk, but rather relies on forging, and is further limited to the use of soft alloys, thus teaching away from combining the spin formed steel center disk of the present invention. Furthermore, neither reference teaches the formation of a 5° bead seat in conjunction with a unitary wheel. Thus, the combination of Jurus and Beyer cannot render the present claim 14

obvious, as there is not only no teaching, but likewise no suggestion or motivation to combine the references to arrive at a unitary wheel having a 5° bead seat of the present invention. As claim 24 depends from claim 14, the limitations which are not taught or suggested by Jurus in view of Beyer are present in claim 24, and accordingly claim 24 cannot be considered obvious over the asserted combination either.

11.0 Provisional Obviousness Type Double Patenting

In the present Office Action, the Examiner asserted a provisional rejection of claims 1-51 of the present invention.

Applicant does not agree that Applicant is claiming the same invention in both applications. While the inventions are clearly related, they are directed towards different products. Furthermore, as the scope of any claims to be allowed is unknown at this time, Applicant believes it premature to enter a terminal disclaimer in the absence of a comparison of allowable claims.

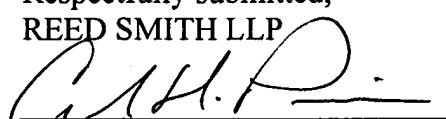
10.0 Conclusion

Based upon the above remarks, Applicant respectfully requests reconsideration and withdrawal of this restriction requirement and early allowance of the pending claims. Should the Examiner feel that a telephone conference with Applicant's attorney would expedite prosecution of this application, the Examiner is urged to contact the undersigned attorney.

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Respectfully submitted,

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